----- Forwarded by Dana Davoli/R10/USEPA/US on 09/11/2009 10:41 AM -----

"POULSEN Mike" <POULSEN.Mike@deq.state.or.us>	To	Dana Davoli/R10/USEPA/US@EPA, "FARRER David G" <David.G.Farrer@state.or.us>
08/07/2009 10:33 AM	cc	
	Subject	BF thoughts

I've been very carefully going over our draft DEQ breastfeeding guidance, and it made me think about some of our issues again. One thought is that there is plenty of evidence that a mother loses about ½ of her body burden to the infant during the course of breastfeeding. Our simple model is consistent with this. So I don't think we can be very far off when we use the simple assumption of equivalent chemical concentrations in adipose tissue and milkfat, for instance.

[In fact, here is my new simpler simple model: Take the total body burden in the mother. Divide by 2. Divide by 365 days and the average body weight of an infant. That's your average dose to the infant. Not that different from what we calculate. But I digress.]

Here's one issue I'll need to ponder a bit more. When we use a 6-month BF period, we get a higher risk to the infant relative to the mother's risk. This follows from our dose equations (the dose to the infant is higher during the earlier months), but it does not make sense from an actual risk standpoint. When we calculate risk for one year, it necessarily includes the higher dose during the first half of the year, so clearly the actual risk for one year of BF should be greater than the risk from ½ -year of BF. Our risk calculations only consider dose, not dose and time. For this reason, I am more convinced to use one-year of exposure in our guidance. I think the ½-year calculation actually overestimates risk. For our poster, this may be fine because we are only looking at dose, not risk.

I'm also looking again at the equations evaluating chemical concentration changes over time in BM. I'm not sure we want to make the simple assumption that concentration in BM at ½ -year is a good average approximation of concentration over one year. But my head starting hurting going back over the equations, so I'll have to come back to that question. If you have some thoughts on doing integrated exposure or whatever, let me know.

- Mike